80 WATT 12 VOLT CRYSTALLINE SOLAR PANEL KIT WITH STAND
User's Manual

SPECIFICATIONS:
Power Rating: Up to 80 Watts
Current: Up to 4.6 Amps @ 17.1 Volts DC

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION

NOTE:
• Avoid Electrical Hazards when installing, wiring, operating, and maintaining your Solar Module. The solar module included generates DC electricity when exposed to sunlight or other light sources.
• For use in 12 Volt systems only
• Observe proper polarity throughout entire power cable wiring route.
• Work Safely. Do not wear jewelry when working with electrical or mechanical equipment. Use protective eyewear when working with batteries or drills. Use extreme caution when on ladders or on roof.
• Follow all safety precautions of the battery manufacturer. Some batteries can release flammable hydrogen gas. Do not produce sparks when working in locations where flammable gases or vapors exist. Shield skin and eyes from battery acid. Wash thoroughly with water if skin or clothing comes into contact with acid or any corrosive matter, which may have accumulated, on the battery.
Keep the terminals and casing clean.
• Always use a charge controller for wattages 15 Watts and above
• Do not attempt to charge non-rechargeable batteries
• Always connect charge controller to battery first
• When disconnecting, always disconnect battery last

INCLUDES:

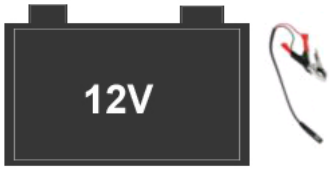
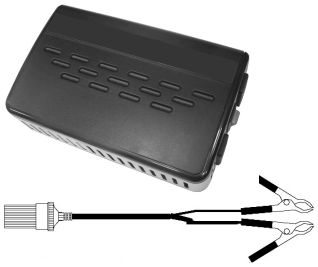
- Solar panel with integrated 'folding' stand
- 7 Amp charge controller
- 200 Watt modified sine wave inverter
- Wiring accessories
- Green LED test light (to check your panel's availability to charge)

SOLAR PANEL STAND:

On the rear of the panel, simply pull out integrated stand. Extend stand to maximum for securing panel.

For additional stability, add weights to bottom of stand (this step is optional).

Basic installation for your solar 12 Volt battery charger

↓	Initially utilize the green LED test light by plugging the light directly into the solar panel's connector. If the LED illuminates, the solar panel is ready to begin charging and you can complete your connections. Your solar panel connects to the trailer plug extension cord.
↓	Trailer plug extension connects directly to the "PANEL" connection side of your solar charge controller
↓	Connect from the solar charge controller to your 12 Volt battery using included alligator clamps. (Red- to the positive terminal, Black to the negative side)
 **(12 Volt Battery Not Included)**	You will now begin to charge dependant on availability of the sun
↓	
	To connect your power inverter, utilize the female 12 Volt receptacle directly to your 12 Volt battery

YOUR SOLAR CHARGE CONTROLLER (SCC)

Cut-in Voltage: 13 Volts
Cut-out Voltage: 14.2 Volts
Max. Load: 105 Watts

During Operation:

GREEN LIGHT INDICATES BATTERY IS FULL. When battery reaches 14.2 V, the SCC will cut out, ensuring no overcharging of the battery.

YELLOW LIGHT INDICATES SOLAR PANEL IS CHARGING.

RED LIGHT INDICATES A LOW VOLTAGE OUTPUT FROM THE SOLAR PANEL.

When battery reaches a voltage below 13 V, the SCC will cut in, and charging will resume. IT IS NORMAL FOR BOTH LIGHTS TO FLICKER IN AND OUT DURING NORMAL OPERATION.

YOUR POWER INVERTER

For AC devices or appliances use the 200 Watt inverter included in the kit. Connect to the battery making sure the positive is attached to the positive battery terminal and the negative is attached to the negative battery terminal (Note: some inverters may have similar color coded alligator clamps). Next, plug the AC device into the inverter. Remember that the start up surge power of the device, which is approximately double the continuous power, must be under the wattage value of the inverter.

It is strongly recommended to turn off the inverter when not in use.

FAQ

1. What type of batteries can my Solar Panel charge?
A. All 12 V batteries similar to those used in cars, boats, RVs, motorcycles and PWCs.
2. Can I overcharge my battery?
A. When using a solar charge controller a 12 V battery should not overcharge
3. Will the solar panel keep my battery fully charged?
A. The solar panel charges your battery with the power of the sun. It is designed to charge batteries or maintain an existing charge dependant on the battery's usage.
4. Can I extend the wire?
A. The wire can be extended up to 15' (4.5 m) for a maximum of 25' (7.62 m), without loss of power or voltage.
5. How can I check my panel is operating?
A. Using a volt meter, check the panel's output. Insert voltage prongs (+/-) into the panel's trailer plug. A reading of 14-23 Volt DC is expected under full sun, and indicates a panel is functioning correctly.

Limited Warranty

The solar panel is covered by a **25** year limited warranty of 80% of power output, and must be tested under optimal conditions. N'Power Product's will warrant to the original purchaser that this product is free from defects in materials and workmanship for the period of 1 year from date of purchase.

The Solar Charge Controller is covered by a **1** year limited warranty. N'Power Product's will warrant to the original purchaser that this product is free from defects in materials and workmanship for the period of 1 year from date of purchase.

The 200 W Power Inverter is covered by a **1** year limited warranty. N'Power Product's will warrant to the original purchaser that this product is free from defects in materials and workmanship for the period of 1 year from date of purchase.

To obtain warranty service please contact N'Power Products for further instruction, at 1-800-222-5381. Proof of purchase including date, and an explanation of complaint is required for warranty service.
Distributed by Northern Tool + Equipment Company 2800 South cross Drive Burnsville, MN 55306
www.northerntool.com